

SoCal Salinity News

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Water Softener Pilot Project Wraps Up with the Promise of a New Project

The Southern California Salinity Coalition's first project has concluded – and its key findings will be examined under a larger collaborative effort.

The Water Softener Pilot Project, launched by Dr. David S. Kung, Kim Knight, and their graduate researchers at Claremont Graduate University in Claremont, California, was organized to help mitigate salinity issues that are caused by the use of water softeners in residential households.

Water softeners are designed to alleviate hard water problems by exchanging calcium and magnesium for “softer” minerals, such as sodium, but when large amounts of sodium chloride are added to the water, a waste stream that contains significant amounts of chloride is flushed into the sewer, creating salinity problems for wastewater treatment and the environment.

Initially, the project looked at means to eliminate water softeners directly. However, it discovered that this was neither the best nor most realistic approach. Some of the key findings included:

- The three major constituents (consumers, utility agencies, and private industry) have different interests in regards to water softeners. It is possible and important that these interests be re-aligned to allow and promote collaboration among the three constituents in the reduction of salt in whole water systems.
- The emphasis should be on salt, not water softeners. Focusing on the removal of softeners leaves the utility agency and private industry at odds with each other. The goal of the agency should be on salt reduction, rather than on the removal of water softeners. This change in strategy will allow industry to collaborate with the utility agency in improving unit efficiency and salt conservation.
- Timed intervention of consumers is critical. Consumers acquire water softeners generally during certain specific events, such as marriage, the purchase of a new home, or birth of a child. Timely intervention at these particular events can be particularly effective in modifying consumer behavior.
- Consumers are not informed (or misinformed) about water

softeners. The specific benefits and disadvantages of water softeners are generally not well understood by consumers. With better information available, consumers can make more intelligent environmental and health choices regarding water softeners.

These key findings will be the basis of a proposed collaborative effort, called the Salinity Reduction Study, on behalf of the Southern California Salinity Coalition, Water Quality Association/Pacific Water Quality Association, National Water Research Institute, Claremont Graduate



Water Softener Pilot Project Team: Nancy Tao, Kim Knight, Christine Canepa, and David Kung.

University, and the Inland Empire Utilities Agency. Martha Davis of the Inland Empire Utilities Agency is leading the proposal workgroup, with several collaborators authoring the proposals for each phase.

The purpose of the proposed Salinity Reduction Study is to develop viable strategies for salinity reduction throughout Southern California.

Drawing on a project funded by the American Water Works Association Research Foundation to study and characterize the sources of salinity in wastewater throughout the Western United States, the Salinity Reduction Study will focus on the service area of the Inland Empire Utilities Agency, a Salinity

Please see NEW PROJECT on Reverse Side

Meeting Brings United Front to Developing Salinity Reduction Study

The proposed Salinity Reduction Study was jumpstarted when members of the Salinity Coalition met in May with representatives from Claremont Graduate University, Water Quality Association, Pacific Water Quality Association, Hydrotech, and Culligan to discuss potential projects on the reduction of dissolved salts in water.

The meeting was groundbreaking because it brought together the principal parties interested in and responsible for reducing salinity, including public utilities and private industries.

Attendee Chris Layton of Culligan, a leading manufacturer of water-softening devices, said that the water softener industry is most interested in working with water utilities to address these salinity issues.

Dr. David Kung, co-principal investigator of the Water Softener Pilot Project study, recommended working closely with the public as well.

“The issue is salt, not the water softener,” he said, “and consumers, when informed, are willing to compromise. For example, rather than rejuvenate the softener every 2 days, what about every 3 or 4 days? We can save a tremendous amount with customer participation and compromise. These are opportunities that don’t require major investment by the industry or sacrifice by the customer.”

By the end of the meeting, attendees agreed to put together a proposal for a water softener project called the Salinity Reduction Study (see article on reverse side).

New Project Looks to Future

Continued from Front Side

Coalition member and project partner. The salinity reduction program implemented in the area, which includes the Cities of Chino, Chino Hills, Rancho Cucamonga, Fontana, Montclair, Ontario, and Upland, will serve as a model for projects in other regions.

The Chino Basin in California was selected as the site of the study because of increasing salinity problems as it transitions from a rural to urban center in San Bernardino County. “The growth in salt in this area is the result of new development and existing water softeners,” said Ms. Davis.

The goals of the study include:

- Developing a long-term communication channel between the Inland Empire Utilities Agency and the community.
- Designing and implementing an educational program to encourage water softener users to participate in a “tune-up” program to increase efficiency or to reduce the use of water softeners.
- Evaluating the results of the program in a final report that will help other regions implement similar programs.

The proposed Salinity Reduction Study will be the Salinity Coalition’s second project. Phase I is expected to begin in September 2004.

Salinity Around the World

Urban Salinity Project in Australia Is Saving Homes

The Wagga Wagga City Council has tackled salinity problems head-on for 7 years thanks to the Urban Salinity Project.

The Australian City first noticed problems in 1993 when trees started dying and water seeped out of the roads. Dampness under homes was a common problem.

Worse, because of Wagga Wagga’s high water table, salt crystals began to form on brickwork, gradually turning them powdery. The structural integrity of housing was threatened.

Urban development and the introduction of a water supply system were the original causes of the problem. The reduction of vegetation, combined with water supply leaks, exacerbated it.

After installing water pressure monitors to collect data on the depth of the water table, the Council launched the Urban Salinity Project, which targets infrastructure, revegetation, and public awareness.

Careful monitoring of households and water supply infrastructure, as well as the construction of an urban bore field, are among the strategies to combat salinity.

The Council is also reaching out to the community by publishing brochures to help people interested in specific issues, like building a new home in a saline environment or determining which native trees and shrubs to plant.

Although drought has made it difficult to gauge the exact success of the project, Wagga Wagga is proud to note that homeowners don’t worry about the rising damp anymore.

SOURCE: <http://www.nrm.gov.au/state/nsw/publications/case-studies/urban-salinity.html>

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